

REMARKS

This amendment responds to the Office Action mailed on March 30, 2010.

Claims 31-37 and 44-61 are pending. Claims 50, 56, 57 and 61 are amended.

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Objection To the Specification

Submitted herewith is a replacement Abstract which is submitted to be more concise and to avoid using phrases that can be implied. As such, the objection to the Specification can be withdrawn upon entry of this Amendment.

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Introductory Remarks

The subject application is directed to transmission control protocol (TCP) used for data communications, and more specifically to security against denial of service attacks and the like in which a connection negotiation phase is required before the TCP handshake.

15 Without a successful connection negotiation, a TCP handshake is unable to complete, thereby preventing connection. Unlike prior art approaches, the connection negotiation *precedes* the SYN handshake packet being transmitted. Thereafter, *i.e.*, after this connection negotiation takes place, the SYN handshake packet is used to initiate a 3-way handshake.

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Section 102(b) Rejection

Independent claims 31, 44 and 50 stand rejected as being anticipated by Borella et al. (U.S. Patent No. 6,269,099).

25 Borella et al. describe the establishment of a TCP connection at column 6, lines 62 through column 7, line 35. The Examiner cites to this very portion in support of the rejection of claims 31, 44 and 50 as being anticipated. However, Borella et al. undeniably describe a three-way handshake in which one device desirous of establishing a connection with another device transmits a TCP packet having a SYN flag (first part of 3-way handshake). Borella et al. then describes the recipient device responding with a TCP/IP SYN ACK flag (second part of 3-way
30 handshake). Then the initiating device sends a TCP/IP ACK packet (third part of 3-way

handshake). The unequivocal teaching is that a connection is established and data is exchanged over IP without any connection negotiation prior to the SYN handshake packet being transmitted.

5 The invention recited in claim 31 defines over Borella et al. in reciting “an initiating party computer system sending a connection request message to a receiving party computer system ... *prior to the transmission of a SYN handshake packet* to initiate a 3-way handshake for a TCP/IP connection” (order of clauses reversed; emphasis added). This communication of a connection request message, and its receipt at the receiving party computer system, is a *prerequisite* to opening “a TCP connection at the receiving party computer system.” In
10 particular, claim 31 calls out that the TCP connection is opened “upon receipt of the connection request message and the handshake packet.”

Borella et al. teach away from the arrangement as claimed. Specifically, Borella et al. describe their invention as an improvement in the art because their mechanism allow “intelligent” edge routers to identify one another using networking protocols such as TCP. Col.
15 2, lines 33-45.

Borella et al. do not disclose the sending of a connection request prior to the start of his 3-way TCP handshake. In this regard, Applicant notes that the connection request is not only different than the 3-way handshake --which is also recited in the independent claims, it is a separate message that is tested before a TCP connection is opened.

20 Borella et al. establish a connection in the first instance using a 3-way handshake and, in this respect their teachings are conventional and completely miss the point of the subject application by not having a negotiation preceding the 3-way handshake. There is no pre-SYN packet transmission that is required to be received at the destination device in order to thereafter establish a TCP connection.

25 In summary, Borella et al. do not disclose the use of a connection request prior to the 3-way handshake. Accordingly, reconsideration of the rejection of the independent claims is respectfully requested.

Section 103(a) Rejection

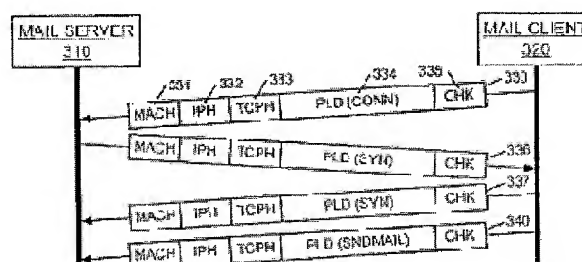
Claims 31-35, 44-47, 50-53 and 56-1 stand rejected as being obvious over Petty et al. (U.S. Publication No. 2003/0014544) in view of Borella et al. (U.S. Patent No. 6,269,099). Claims 36, 37, 48, 49, 54 and 55 stand rejected over Petty et al. in view of Borella et al. in
5 further view of Park et al. (U.S. Publication No. 2002/0073322).

Petty et al. is cited for teaching a data communication connection method for TCP in which, prior to establishing a TCP connection, an initiating computer sends a connection request message to the destination. The Examiner cites to the Abstract, and paragraphs [0058], [0068] – [0069] for this teaching. For the remaining features of the independent claims 31, 44 and 50, the
10 Examiner cites to Borella et al. on precisely the same basis as cited in regard to the 102(b) rejection addressed above. The Examiner cites as motivation for the modification the ability to offload TCP/IP related processing with the peer network destination/server across the Internet for accelerated TCP/IP connections between clients.

The portions of Petty et al. cited by the Patent Office concern the discussion of existing,
15 related art. As explained in paragraph [0047], Figures 1 through 3 “illustrate the limitations of present day TCP/IP connection management techniques...” Nevertheless, the detail provided by Petty et al. distinguishes over the invention defined by the pending claims.

The technology cited in the portions noted by the Office describe TCP/IP communications that are passed between client and server without the transmission of a
20 connection request message in the manner recited in each of the independent claims now pending.

In particular, referring to claim 31 for example, the *initiating party* is sending both the connection request message and SYN handshake packet to initiate a 3-way handshake for a TCP/IP connection. As explained in the subject application, among other things this can stem
25 the flow of denial of service attacks and other demands on a server.



In contrast, as shown in the portion of Fig. 3 reprinted above, Petty et al. has *mail client* sending the connection request, but three-way handshake process is initiated by the *mail server* (frame 336) and completed by the mail client (frame 337). *See* paragraph [0069]. As such, the flow of messages is different than what is claimed.

5 Moreover, the disclosure of Borella et al. cannot be fairly combined with Petty et al. to suggest the present invention because the approach of Borella et al. is to use existing network protocols such as TCP to provide “intelligent” edge routing (col. 2, lines 33-45), and there is no connection request that precedes the TCP communications. If the TCP connection request of Petty et al. were to be used in connection with Borella et al., there still is not teaching or
10 suggestion of a message flow as recited in claim 31.

 Independent claim 44 also calls out an initiating device adapted to send a connection request message and the subsequent transmission of a SYN handshake packet for a TCP IP connection, and further calls out that the connection request message and the SYN handshake packet are received at the receiving device. Accordingly, claim 44 distinguishes over the
15 proposed combination of references for the same reason as independent claim 31.

 Independent claim 50, by the accompanying amendment, specifically calls out that the connection request message is an “IP datagram.” The cited references do not teach or suggest a connection request message being communicated outside of the TCP paradigm, nor do they recognize anywhere in their disclosure that receipt of a minimal protocol overhead such as
20 provided by a datagram be the basis for enabling a TCP connection to thereafter be opened.

Discussion of Dependent Claims

 Applicant submits that the dependent claims are allowable at least in view of their dependency, directly or indirectly, from one of the independent claims. Accordingly, Applicant
25 relies on the foregoing comments to distinguish over the rejection of claims 36, 37, 48, 49, 54 and 55 over Petty et al. in view of Borella et al. in further view of Park et al. (U.S. Publication No. 2002/0023322).

 Further, in regard to dependent claim 56, this claim has been amended to more particularly call out that that the TCP connection requires negotiation of the connection request
30 using the claimed IP datagram before accepting any TCP connection request. *See* Invention

Summary, page 3, lines 22-25. Insofar as Borella et al. and Petty et al. both use TCP packets to open a TCP connection without using any IP datagrams at all, claim 56 is believed to define patentably on the basis of this further feature.

Further, in regard to dependent claim 57, this claim has been amended to more particularly call out that that a TCP connection request is not accepted unless a connection has already been negotiated using the claimed IP datagram. *See* Invention Summary, page 3, lines 22-25. Again, because Borella et al. and Petty et al. both use TCP packets to open a TCP connection without using any IP datagrams at all, claim 57 is believed to define patentably on the basis of this further feature.

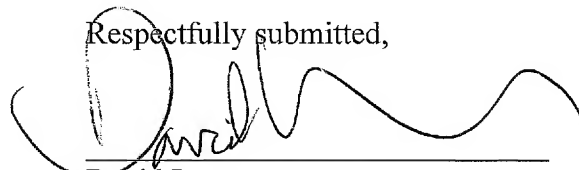
Further, in regard to dependent claim 61, this claim has been amended to more particularly call out that that the TCP connection is not opened until after receipt of the connection request message (which, again, is claimed as being an IP datagram), and furthermore not until after negotiation of the connection request using the claimed IP datagram. *See* Invention Summary, page 3, lines 22-25. As the cited art fails to teach or suggest a system that opens a TCP connection using IP datagrams, the subject matter of claim 61 is believed to define patentably on the basis of this further feature.

Applicant respectfully requests that all the rejections be withdrawn.

Dated: June 28, 2010

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